

LIFE CYCLE OF ANGIOSPERMIC PLANTS

1. **Write down the answer of the following questions in one line each :**

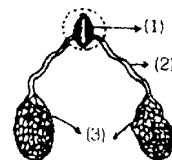
- (a) What do you mean by apomixis?
- (b) What is clone?
- (c) What is ramet?
- (d) Why genetically similar type of plants are produced in apomixis?

2. **To find out the wrong words in Paragraph and write again with under line the correct words in paragraph :**

"During the maturation of anther, various types of changes take place in all layers of it. First of all its tapetum degenerates. With the formation of pollen grains in pollen sacs, middle layer also degenerates. During the development, thickening of callous fibres take place on adaxial and inner walls of endothecium. Hygroscopic cells of endothecium absorb water from atmosphere in dry season. Due to excess of water, outer thick walls of endothecium contracts and become convex. As a result, pulling force is developed on the entire inner surface of endothecium. Due to this pulling force, thick walled cells of stomium ruptures and this way dehiscence of anther take place."

3. During the germination of pollen grain, if generative cell destroyed by laser beam, Even then normal growth of pollen tube is continue in carpels of Angiosperms HOW?

4.
 - (a) Label 1 to 3 in given diagram?
 - (b) Which is the sticky structure of this diagram?
 - (c) The above structure is found in which type of plant?
 - (d) What is the name of above structure?
 - (e) In which plant this structure is found?



5. Answer the following questions in brief .

- (a) What do you mean by reproduction?
- (b) Name important agencies which help in cross pollination
- (c) What do you understand about pollen grain?
- (d) What is embryo sac and how it is?
- (e) In which type of plant autogamy is found?

6. **Fill in the blanks :**

- (a) In angiosperms, endosperm is always
- (b) Megaspore is the first cell of
- (c) Antipodal cells of embryo sac are present towards the
- (d) Longest pollen grain is found in..... plant in plant kingdom.
- (e) A group of undifferentiated cells obtained from the culture of cell is called
- (f) is essential for fertilization in angiosperm.
- (g) Pollen grains are formed inof stamen.

- (h) The remaining part of nucellus in seed is called.....
- (i)is discovered by Leeuwenhoek in Citrus.
- (j) The drinking part of green coconut is

7. **Fill in the blanks with the help of words which are given in brackets.**

- (a) Cross pollination brings aboutrecombination in new plants.**(Chemical/Genetic)**
- (b) Albuminous seeds store food material in**'Endosperm/Cotyledon'**
- (c) Theattract the growth of pollen tube towards egg apparatus by secreting some chemical substances **(Obturator/Filiformappatusj)**
- (d) In Calotropis. all the microspores of anther lobe covered in bag like structure to form**[Poliinia/ Massullae]**
- (e) Fusion of male gamete and secondary nucleus is called **(Syngamy/Triple fusion]**

8. **Answer the following questions. [Answer should be to the point]**

- (a) What do you mean by polygamous plants?
- (b) What is carpophore?
- (c) What is the meaning of ox-plant?
- (d) What is bulbits?
- (e) What is parthonocarpy?

9. **Define the following terms :**

- (a) Apoqamv (b) True polyombryony (c) Gametogenesis
- (d) Herkogamy (e) Hyposiase

10. **Give answer in one word of the followings question :**

- (a) In dicotyledons. generally food is stored in.
- (b) female gametocyte of flowering plants that contains an egg cell.
- (c) Cross-pollination through (he agency of wind.
- (d) The place on the suit face of pollen grains where exine is very thin or absent.

11. **Give scientific reason. Why :**

- (a) Vegetative propagation is the only method of reproduction in Banana and Rose plant.
- (b) Pollen grains of osteria suspended below the surface of water.
- (c) Developing seed play significant role in the development of normal fruits.
- (d) Apomixis is also known as abnormal sexual reproduction.

12. Match column-I with column-II.

	Coloumn – I		Coloumn - II
(A)	Pollen grain	(i)	Exine
(B)	Embryosac	(ii)	Female gametophyte
(c)	Ovule	(iii)	Campylotropous
(D)	Tapetum	(iv)	Protoplast bodies
(E)	Fertilization	(v)	Male gametophyte
		(vi)	Triple fusion
		(vii)	Germ pore
		(Viii)	Endosperm
		(ix)	Mesogamy
		(x)	Intine
		(xi)	Vegetative reproduction

13. Write the answers of following questions in one line :

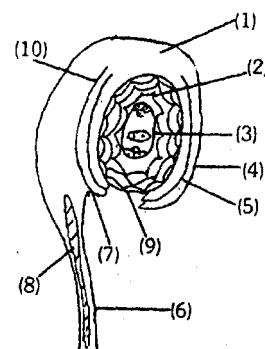
- What is monosiphonous?
- What is the function of obturators?
- What is Hilum?
- What is zoophily?
- What is xenogamy?

14. Fill in the blanks

- In Angiosperm Male reproductive organ is known as.....Stamen is also known as.....
- Tapetum is athick layer. In atapetum is also absent.
- In Amphitropous ovule more affectiveis found. Embryosac becomes.....in this ovule.
- Pollen grain is also known male gametophyte and intine is composed of
- Eight celled stage of embryo is known asstage and 16 celled stage is known as.....stage.

15. Write the following answers with the help of diagram :

- Label (1) to (10) points in given diagram.
- What is the main function of (2)?
- What is Raphae?



16. **Answer the following questions in one line each :**
- What is Palynology?
 - What is aril?
 - What is Homogamy?
 - What is polyembryony?
 - What is amphimixis?
17. **One word answer :**
- How many stamens are present in **Capsella**?
 - Which is the most common ovule in **angiosperm**?
 - Which is the inner most **layer** of anther?
 - Which type of endosperm is found in **Capsella**?
 - Which layer is called ornamental layer of pollen grain?
18. **Give the answer of the following questions in one line :**
- What is Syogamy?
 - What is Chalazogamy?
 - What is ornithophily?
 - What is Xenia effect?
 - What is metaxenia of feet?
19. **Answer the following question in "One word " :**
- Which type of tapelum is found in Capsella?
 - How many nucleus of embryoac take part in double fertilization?
 - Which structure is called immature male gametophyte?
 - On the basis of integument which type of ovule is found in members of Gamopetalae?
 - In which type of ovule raphe is absent?
20. **Sporophyte of a flowering plant has 40 chromosomes. Then, the chromosomes number in the following would be.**
- | | | |
|-----------------------|------------------|-------------------|
| (a) Aril | (b) Pollen grain | (c) Integuments |
| (d) Endosperm | (e) Megaspore | (f) Polar nucleus |
| (g) Secondary nucleus | (h) Leaves | (i) Root |
| (j) Perisperm | | |
21. **Note relationship between first two words and suggest a suitable word for the fourth place.**
- Below the cotyledon : Hypocotyl :: Above the cotyledon:
 - Coconut : Liquid syncytium **Areca nut** :
 - Zygote : Syogamy :: Endosperm :
 - Eggcell : Haploid :: Embryo

- (e) **Capsella** True fruit :: Apple :
- (f) Root : Radicle :: Stem :
- (g) Salvia : Lever mechanism :: **Ficus** :
- (h) Malegametophyte : Pollengrain :: Female gametophyte:
- (i) Microsporangia : Pollens Microsporangia
- (j) Ovule : Integument :: Seed :

22. **Very Short Answer Type Questions :**

- (a) Define reproduction.
- (b) Name the type of asexual reproduction in which root, stem or leaf is involved.
- (c) Give an example of a plant showing vegetative propagation by leaves.
- (d) Name the artificial means of vegetative propagation.
- (e) Which are the two main types of grafting?
- (f) Give two examples of plants largely propagated by stem cuttings
- (g) What is the condition called in which fruits develop without pollination and fertilization?
- (h) What are the male and female reproductive parts of a flower?
- (i) What are the three parts of a carpel?
- (i) Name the four whorls of a flower.

23. **True or False :**

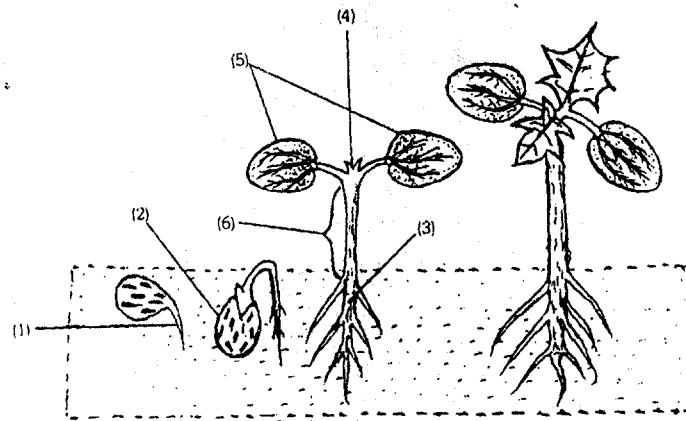
- (a) Nutritive layer of cells around pollen sacs in anther is tapelum.
- (b) A carbohydrate layer present on the outer surface of grains of maize rice etc. is called aleurone layer.
- (c) The flower with superior ovary is called hypogynous.
- (d) Wall of fruit having epicure, mesocarp and endocarp is called periderm
- (e) The part of the plant that is grafted on the stock is called scion
- (f) A cotyledon of bean seed is called scutellum.
- (g) The maintenance of purity of a given variety of plants by propagation is called cloning.
- (h) The transfer of the pollen grains from the anther to stigma is called Fertilizaqtion.
- (i) Double fertilization or triple fusion is characteristic of angiosperms.
- (j) The bean seed is albuminous, while a **maize** seed is exailmnous

24. **Fill in the blanks :**

- (a) A technique to produce genetically identical individuals from a single cell is known as
- (b) A population of genetically identical plants derived from an individuals is called a
- (c) A protective sheath of radicle in monocots is called
- (d) Study of pollen grains is known as

- (e) Phenomenon of the formation of more than one embryo per ovule is called
- (f) During grafting the part that becomes the supporting portion is called.....
- (g) The fruit that develops from the whole of inflorescence is called
- (h) A stamen consists ofand.....
- (i) Genetically, the megaspore mother cell is

25.



- (a) Label (1) to (6) in above diagram.
- (b) Which type of germination is represented by above diagram?
- (c) The seed of which plant is represented by above diagram?
- (d) In which part of embryonal axis, fast growth takes place in above germination?

ANSWERS

1.
 - (a) Apomixis is reproduction in which new plants are formed without meiosis and fusion of gametes (fertilization)
 - (b) A generation is produced from the single parent is called. clone.
 - (c) Every member of clone is called ramet.
 - (d) Because new plants are formed from single parent without meiosis and fertilization.

2.

During the maturation of anther various types of changes take place in all layers of it. First of all its **middle layer** degenerates. With the formation of microspores in pollen sacs, **tapetum** also degenerates. During the development, thickening of α -**cellulose fibres** takes place on radial and 'inner walls of endothecium. **loose water** into Hygroscopic cells of endothecium loose water into atmosphere in dry ' hot season. Due to **loss of** water, outer **thin** walls of endothecium contract and become **incurved** or **concave**. As a result, pulling force is developed on the entire outer surface of endothecium. Due to this pulling force, **thin** walled cells of stomium rupture and in this way dehiscence of anther takes place.

3.

Normal growth of pollen tube is continued in angiosperms. because pollen tube. is formed by vegetative cell and its growth under the control of vegetative nucleus.

4.

(a)	Labelled name	(1) Corpuscular	(2) Caudicle	(3) Pollinia
(b)	Corpusculum	(c)	Insect pollinating plants (Entomophilous)	
(d)	Translator apparatus	(e)	Calotropis plant	

5.
 - (a) Reproduction is one of the important process by which every living organisms make a copy of itself
 - (b) (a) Anemophily (b) Entomophily (c) Hydrophilic
 - (c) Pollen grain considered as first cell of male gametophyte or immature male gametophyte.
 - (d) Embryosac is a female gametophyte of Angiosperms and it is seven celled and eight nucleated structure.
 - (e) In bisexual flowers.

6.

(a)	Triploid	(b)	Female gametophyte/Embryosac
(c)	Chalaza	(d)	Zostera
(e)	Callus	(f)	Pollination
(g)	Anther	(h)	Perisperm
(i)	Polyembryony	(j)	Nuclear endosperm

7. (a) Genetic (b) Endosperm (c) Fibriform apparatus
(d) Pollinia (e) Triple fusion
8. (a) When many types of flowers (Male, female and neutral) are present on the same plant. The plant is called polygamous.
(b) When growth of thalamus take place inside the ovary then it is called carpophore.
(c) The material which taken from the plant in tissue culture for the production of new plant is called ex-plant.
(d) They are special fleshy buds produced in place of axillary buds of leaves are called bulls.
(e) Development of fruit from unfertilized ovary is called parthenocarpy.
9. (a) When saprophyte is directly formed from any cell of female gametophyte without fertilization except egg then it is called apogamy
(b) When more than one embryos are formed inside the single embryo sac is called polyembryony.
(c) The entire process in which gametes are formed from spores is called gametogenesis.
(d) When special structural barriers are formed in between the anther and stigma of flowers which prevent the transfer of pollen from anther to the stigma of same flower is called herkogamy
(e) The barrier which is formed below the embryo sac towards the chalazal is called hypostase.
10. (a) Cotyledons.
(b) Embryonic
(c) Anemophily
(d) Germ pore
11. (a) Because these plants have lost their capacity to produce seeds.
(b) Because they have same specific gravity as that of water.
(c) It has been shown that developing seeds produce hormones which help in development of fruits.
(d) Because embryo is formed in this process as sexual reproduction but without meiosis and fertilization.
12. (A) (i), (v), (vii), (x) (B) (ii) (C) (D) (iv) (E) (vi), (viii), (ix)
13. (a) During the germination, if single pollen tube is formed from Pollen grain this condition is known as monosiphous
(b) Obturators direct the passage of pollen tube in ovary towards micropyle
(c) Point at which funiculus attached with the body of the ovule is known as hilum
(d) When the pollination brings by animal is called zoophily.

- (e) When the pollination takes place in between the flowers of two different plant of the same species that is called xenogamy.
14. (a) Androecium, microsporophyll
(b) Single celled, Mature anther
(c) Curvature, Horse shoe shaped
(d) Immature, Pectocellulose
(e) Octant, Globular
15. (a) (1) Chalaza (2) Nucellus
(3) Embryosac (4) Outer integument
(5) Inner integument (6) Funiculus
(7) Hilum (8) Vascular tissue (9) Micropyle
(10) Raphae
(b) The main function of nucellus is provide nutrition to einbryosac, during development.
(c) Some part of the funiculus attached with the body of the ovule at the lateral side this part is called Raphae.
16. (a) Study of pollen grain Is known as palynology.
(b) It is the type of third integuments which develops from the base (funiculas) of the ovils
(c) Both the sex organs of a flower mature at the same time.
(d) When the more than one embryo is found inside the single seed is known polyembrence
(e) Reproduction in which an embryo is formed by meiosis and fusion of the gametes
17. (a) 6
(b) Anatropous
(c) Tapetum
(d) Nuclear Endosperm
(e) Exine
18. (a) When I he fusion of male and female gametes takes place which is known syngamy
(b) When pollen tube enter into the ovule through the Chalaza.
(c) When pollination takes place by birds is known ornithophilv
(d) Hied of piles on endosperm inside embryosae except embryo
(e) Effect of pollen on structure present out side the ernbryosac Seeds of Fruits]
19. (a) Glandular or secretory tapetum
(b) 5
(c) Pollen grain
(d) Unitegmie ovule.

- (e) Orthotropous ovule.
20. (a) 40 (b) 20 (c) 40 (d) 60 (e) 20
(f) 20 (g) 40 (h) (i) 40 (l) 40
21. (a) Epicotyl (b) Ruminant endosperm
(c) Triple fusion (d) Diploid
(e) False/pseudo fruit (f) Pteridophyte
(g) Trap door mechanism (h) Embryonic
(i) Ovule (i) Seed coat
22. (a) The means of perpetuation of species is known as reproduction
(b) Vegetative reproduction.
(c) Bryophyllum.
(d) Cutting, layering and grafting.
(e) Scion grafting and bud grafting.
(f) Sugarcane and rose.
(g) Parthenocarpy
(h) Androecium and gynoecium
(i) Ovary, style and stigma
(j) Calyx, corolla; androecium and gynoecium
23. (a) True (b) False (c) True (d) False (e) True
(f) False (g) True (h) False (i) True (j) False
24. (a) Cloning (b) Clone
(c) Coleorhiza (d) Palynology
(e) Polyembryony (f) Stock
(g) Composite (h) Filament and anther
(h) Diploid
25. (a) (1) Radicle (2) Seed coat (3) Primary root
(4) Plumule (5) Cotyledon (6) Hypocotyle
(b) Epigeal germination
(c) In **Castor/Ricinus** seed
(d) In Hypocotyle